

Japan.	N. China, from Shanghai northwards.	S. China, from Shanghai southwards.	Formosa.	Luzon.
fuscatus	fuscatus naumanni <i>ruficollis</i>	<i>fuscatus</i> <i>naumanni</i>	<i>fuscatus</i> <i>naumanni</i>	
daulias pallens chrysolaus	daulias pallens chrysolaus	<i>daulias</i> <i>pallens</i> <i>chrysolaus</i> hortulorum	<i>daulias</i> <i>pallens</i> <i>chrysolaus</i>	<i>chrysolaus.</i>
cardis sibiricus	cardis sibiricus	<i>cardis</i> <i>sibiricus</i> mandarinus.		

XXI.—*The Ornithology of Formosa, or Taiwan.*

By ROBERT SWINHOE, F.Z.S., F.G.S., &c.

(Plate V.)

At the time when our forefathers, of blessed memory, tattooed their bodies a sky-blue, and ranged the woods at large in a state of nature, and all Europe was sunk in savagedom, we are informed by Chinese records that certain of the Mongolian hordes had settled down into partial civilization, had built themselves houses, constructed boats for the lakes and rivers, and small coasting-vessels for the sea, and, in fact, had already commenced to make progress in the development of arts and sciences. The children of the future empire were then divided into numerous petty states, each with its king, but all united in one common protective federation. At last one ambitious monarch, possessed of more power than the rest, by intrigues and conquest, absorbed all the other petty states, and established an empire, which, in the course of several centuries, changed hands a number of times. But we do not here intend to follow the Chinese through their various dynastic struggles: we pass them all at a leap, and pick ourselves up in the dynasty before the reigning one, viz. that of the Ming; for it was during this period that the Chinese first became aware of the existence of such an island as Formosa. They had had sea-going vessels for centuries, and were in the constant habit, as Marco Polo

tells us, of making voyages to India through the Straits of Malacca. They had, moreover, possessed the compass, and knew well the use of it; but they were then, I presume, as they are now, timid mariners, and feared to venture out of sight of land. This, however, can scarcely be alleged as an excuse for the lateness of the discovery, as, on a clear day, the mountains of Formosa can plainly be discerned from the opposite coast of China. For whatever reason it was so long delayed, it was reserved for a eunuch of the court of the Emperor *Suen-te* (A.D. 1430) to be the first man to visit it. This individual was bound on an homeward voyage from India, and, falling across a typhoon, got blown on the island. While the crew were engaged in repairing the damaged vessel, he employed his time in taking notes on the advantages of the new land, and in collecting herbs and simples. He shortly after arrived safely in China, and laid a full report of his discoveries before the Emperor. But it was not for the Ming dynasty to plant a colony on the *terra incognita*. The Ming fell away before the conquering Mantchoos, who installed the present or *Ching* dynasty (whence the name *China*). In the 42nd year of *Kia-tsing* (1564), when the present provinces of Canton and Fokien were still independent kingdoms, constant struggles prevailed, both by land and sea, between the usurping Tartars and the natives of the free states. In one of the sea-fights the Tartar admiral gave chase to the enemy, who ran for refuge into the large harbour of the Pescadores, or *Punghoo*. The Tartar was delighted at his discovery, and took possession of the islands in the name of his Emperor. The enemy, who is reported to have been a pirate from the kingdom of Canton, fled to the further shores, where, in the intricate navigation of the numerous shoals, he eluded the Tartar; and having recaulked his vessels, it is said, with the blood of the unfortunate aborigines that, in their innocence, came to render him assistance, he returned to his native land. The Tartar Emperor deputed a governor to the little group of islands; and farmers and fishermen soon began to emigrate thither with their families. In the first year of *Tien-ke* (1620) a Japanese fleet passed down the coast of Formosa; and finding the neighbourhood of the present city of Taiwanfoo a pro-

missing locality, they resolved to establish a colony there. Soon after a Dutch vessel, bound on a Japanese voyage, was wrecked on the shore. The Dutch contrived to get permission from the Japanese to select as big a morsel of land as they could cover with an ordinary cow-hide. The permission being gained, they cleverly cut the hide up into thin strips, and enclosed a site of several acres on what was then an island close off the mouth of the river. On this they built a fort (A.D. 1634), called the *Castel Zelandia*, which stands to this day. The Japanese got disgusted, and deserted the island, whereupon the Dutch built another fort higher up on the north bank of the river. This fort also stands; but the river has dwindled into a small shallow stream, the island has become united with the land, and the fortress, some way from the banks, is at present in the heart of the large straggling city of Taiwanfoo, enclosed by its walls, marking well the changes that so short a lapse of time has wrought in the configuration of this constantly rising coast. The struggle for mastery continued hot and strong between the Tartars and the natives of Fokien, when a merchant, well known by the name of Koksinga, who had risen from small means and amassed a fortune by trade, equipped a fleet of vessels, and sailed against the Tartar navy. In the first several battles he was victorious; but being at last worsted, he determined to leave the cause of his royal master, and seek to establish a kingdom for himself. Numbers of Chinese had ere this emigrated to the Dutch portion of Formosa, which had become a flourishing colony and place of call for Netherlands ships trading between Java and Japan. The Dutch had also before this time established themselves in various other parts of Formosa, and had introduced missionaries into the island with a view to convert and civilize the aboriginal tribes, whom they found peaceful and docile. They had built a fort on the Tamsuy river, which is also still standing; and they had expelled a small settlement of Spaniards and Spanish priests, who had built a small fort and located themselves at Keling, on the north coast, as they considered the whole island virtually their own. In the 17th year of *Shun-che* (A.D. 1661) Koksinga sailed for Formosa. He first visited the Pescadores, and wrested those

islands from the Dutch, who had previously expelled the Tartar governor and established themselves in a fort, which still remains. Leaving 100 vessels of his fleet to guard these new possessions, he continued his voyage with the remainder. He arrived off Fort Zelandia, which was defended by only eleven Hollanders, assisted by numerous Javan troops and aborigines. There were also four Dutch vessels anchored off the fort. Koksinga's fleet mustered 900 sail; but the Dutch defended themselves so gallantly with their guns, of which the Chinese had none, that the latter could make no impression. Koksinga at last hit upon a plan which succeeded. He set fire to some of his junks, and set them adrift among the Dutch vessels, thereby burning them. He then demanded the surrender of the fortress, and permitted the Dutch to sail away in the remaining vessel. Such is the Chinese account of the expulsion of the Dutch from Formosa; but the old Dutch records represent the event as attended with considerable butchery and cruelty. The conqueror sent some of his fleet up the coast to garrison the fortresses at Tamsuy and Kelung, and established his court at Fort Zelandia. He did not, however, live long to enjoy his newly-acquired territory, for death snatched him away after a reign of one year and nine months. Upon this the island fell to his son, who, in the twelfth year of Kanghe (A.D. 1673), crossed over with a fleet to the assistance of the King of Fokien against the Tartars, but, on the Fokien King claiming to himself a higher rank, took offence and declared war against him. He defeated the King of Fokien, who abandoned his territories to the Tartars; and he then returned to Formosa, where he soon after died. He was succeeded by his son, a boy of tender years, under the regency of two ministers, his particular friends. The Tartars abolished the kingship at Fokien, and appointed a viceroy, in the 21st year of Kanghe (A.D. 1682). The first viceroy, *Yao*, offered an amnesty to the Formosan colonists if they would shave their heads, in submission to the Tartar rule; and their young monarch was requested to visit the Emperor at Peking (the court of the Mantchoos, the Emperors of the previous Ming dynasty having held theirs at Nanking). The young king, on the advice of his regents, acceded to the request, and, on his arrival at court,

was honoured with the rank of Chinese Count, and detained for life at Peking; and Western Formosa, or Taiwan, was placed under the government of the Mantchoos, and became a district commanded by a Taoutai or Prefect, under the Viceroy of the province of Fokien, in the 22nd year of Kanghe (A.D. 1683), as it remains to this day.

The island of Formosa, lying between north latitude $25^{\circ} 20'$ and $21^{\circ} 54'$, of an area about equal to the half of Ireland, was first designated by the name it now bears by the Portuguese, from the beauty of its scenery; the Spaniards applied to it their word with the same meaning—*Hermosa*. It is termed by the Chinese *Taiwan* or Terrace Bay, which name was first applied to the once small island off the capital. The whole island, as we before noted, was, some two centuries back, in the hands of wild tribes of the Malay type, who were divided, according to Dutch records, into a vast number of petty communities, each ruled by its king or chief, and speaking different dialects. The lapse of time has wrought a great change in the condition of the inhabitants. The Chinese emigrants from Amoy, Chinchew, and Swatow, with a small number of Cantonese, have possessed themselves of almost the entire western seaboard, as far south as lat. $22^{\circ} 20'$, up to the foot of the mountains, which run north and south, and nearly divide the island in half. The Chinese territory continues round the north coast, and on the east side down to Sawo, lat. $24^{\circ} 37'$. It will thus be seen that on the west side the savage has been driven almost entirely from the coast to the refuge of the mountain fastnesses, on which the colonists are daily encroaching. On the east he still enjoys a long line of coast; but it is so steep and precipitous, destitute of harbours, and bounded by a fathomless ocean, that the Chinese make no attempt to possess themselves of it. On this coast there are a few sandy nooks, with barred-up mountain-streams, whence small fishing-boats issue on to the sea. These boats are plied by the few Chinese who make a living among the savages; for the aborigines are too wild and too proud to stoop from the chase to such menial work. The savages still maintain their distinctness of tribes and dialects; but they have sadly dwindled in number, and will continue to decrease before the sturdy ad-

vance of the colonist, who clears the hills of the forest and exterminates the beasts of the chase. But another and perhaps more effectual cause of their rapid diminution is the constant feuds carried on by adjacent tribes, chiefly with a view to try their skill at arms, and prove the prowess of their youth, who are compelled, by their laws, to present the lady of their choice with the head of an enemy before they can claim her for a bride. Another destructive cause is the law for preventing women from becoming mothers till they are thirty-six, all previous to that age being compelled to produce abortion. Between the territories of the savage and those of the Chinese there is generally a few acres of common land in which barter is carried on, and which bounds neither side are allowed to cross. On the range of mountains inland of Tamsuy there is a copper-coloured race, called the Kweiyings, whom I visited and found to be a short, sturdy, good-looking people, of somewhat of the Malay type. The men go about nearly naked, with merely a short jacket to the waist, and a rag round the loins. In winter they wrap themselves up in plaids. They wear pieces of wood through their ears, as well as rings made of shells, and glass-bead necklaces, and carry their hair long and parted in the middle. The women wear long wrappers round their loins, and jackets, and wrap their heads in blue turbans. They also wear ear-rings and necklaces. The unmarried men and women tattoo a square mark on the forehead, the married men also on the chin, and the married women right across the face, from ear to ear. Their language contains many words allied to Malay. These people, I was informed by some, occupied the greater part of the mountain-range; and certainly those we met at Chock-e-day, on the east coast, lat. $24^{\circ} 7'$, in 1857, when circumnavigating the island, more resembled the Kweiyings than the Kalees, who are a darker race, more allied in appearance and language to the Tagals of the Philippines, and inhabit the south end of Formosa. But it is not improbable that there are yet other races in the country intermediate between these two; and in the higher mountain-range, which attains to a height of 12,000 feet, I am led to believe that a race of Negritos still exist. When at Sawo and the adjoining plains on the N.E. coast, we found several

villages of what the Chinese called "cooked" or civilized savages, who were living in harmony with the colonists, and turning their attention to agriculture. The numerals of their language were identical with those of the Kalees of the south; but they had canoes and two Spanish words, the one for "horse" and the other for "buffalo," which would appear to show that they must have had some connexion with the old Spanish settlement at Kelung. At present they are dwellers on plains, and entirely isolated, by nearly a hundred miles of mountains, from the region of the Kalees. Their language otherwise does not agree in the majority of words. There is yet another race that I met when at the city of Taiwanfoo, who had shaved their heads, had intermarried with the Chinese, and had become almost identical with them. These people are called *Pepos*; they speak quite a distinct language, and declare themselves descendants from the soldiery brought to the island by the Dutch. I may add that, from a vocabulary of a so-called "Favorlang" language of Formosa, translated from the old Dutch by Dr. Medhurst, there must have existed another race of Malays which I did not fall in with; and this, as well as other Dutch accounts, induces me to believe that there were formerly several other distinct races of Malays in the island, of whom probably small remnants still exist in the vast range of mountains between those of the Kweiyings in the north and the Kalees in the south, though doubtless, what with the encroachments of the Chinese colonists on the one hand, and the constant internecine war carried on by the various cramped feudatories, some of the tribes may ere this have ceased to exist.

The Chinese reckon their territorial acquisitions in Formosa politically as a *foo* or district of the province of Fokien, and depute thither for its civil government a Taoutai or Prefect, with extraordinary powers. He is virtually responsible to the Viceroy at Foochow, but has permission, on all important subjects, to memorialize the throne direct. The district of Taiwan is divided into four *hiens*, or counties, and five *tings*, or marine magistracies. They are, the Fungshan Hien, comprising all the Chinese territory south of the capital city, Apes' Hill included; Taiwan Hien, comprising the capital and surrounding country;

thence southward, Kia-ne Hien and Changhwa Hien respectively. The Taifang Ting presides over the sea-board of Taiwan Hien and Funghshan Hien; the Loo-keang Ting over that of the two other counties. Further north we have the Tamsuy Ting, comprising the north coast, from lat. $24^{\circ} 33'$ to the N.E. corner. The Komalan Ting includes all the acquired territory on the east coast as far down as Sawo; and the Panghoo Ting extends over the group of islands called the Pescadores, off the west coast. From July to the middle of November I collected in the counties of Taiwan Hien and Funghshan Hien, both of which, for the most part, consist of one vast alluvial plain, interspersed with a few solitary hills, not exceeding 2000 feet. There are high mountains in the background, but these I did not visit. This part of the country is highly cultivated with rice, sugar-canes, &c., interspersed with fine groves of bamboos and other trees. Inland, water is abundantly supplied by ponds and numerous small rivers, which, however, choke themselves before debouching into the sea, and are useless for navigation. From December to the 9th May I passed in the Tamsuy Ting, on the north-east coast. There we had a moderately fine river, winding down from a long chain of high mountains, which are said to run nearly north and south, and to divide Formosa into a flat low country on the west and a rocky mountainous country on the east. The neighbourhood of Tamsuy abounds in small valley-plains, well watered and cultivated, but for the most part in hills and undulations, all, however, cleared of their pristine verdure, and now covered with coarse grass, with an occasional hill-side patch of wood. The hills in the immediate vicinity do not exceed 3000 feet; but the river gives communication to the lofty forest-covered range of mountains, which are plainly visible on clear days, the furthestmost covered with snow as late as April. The highest mountain in Formosa has been set down as 12,000 feet. It is to this mountain-range, which I visited, and over which my hunters constantly rambled, that I owe most of my novelties. As far south as lat. $24^{\circ} 30'$ the country on the west coast partakes of a similar character to that prevailing at Tamsuy. Below this the ground is less undulatory and more flat until you reach lat. $22^{\circ} 25'$, when the hills again approach the sea. The north

coast is undulating and mountainous; but on the east, from lat 25° as far as Sawo Harbour, you have a large plain, with a few small rivers. South of Sawo the coast is very lofty and precipitous, with occasionally a sandy valley opening out into the sea. There are no harbours on this dangerous side, and apparently no shore. Up this entire length of east coast we have the Pacific warm or gulf-stream, called by the Japanese the *Kuro-siwo*, which, passing the north-east corner of our coast, takes a turn, and warming the northern shores of Japan, spreads itself out to temper the Californian and the western coast of America. To this ever north-flowing warm stream we owe the six months' almost incessant rain that prevails during the winter at Formosa. Whenever the N.E. monsoon blows strong (and that is too frequently the case in winter), the warm vapours of this stream saturate the wind, and induce incessant precipitation on our land and about twelve miles to seaward. The rain-line does not extend much beyond this, and the monsoon passes to the Chinese coast as a dry, cool, bracing breeze. The temperature in summer rarely rises above 100°, and in winter, on the sea-level, seldom falls below 40°. In autumn, every afternoon, masses of storm-clouds regularly every day roll northwards along the mountain-chain, accompanied with loud roars of thunder, fearful flashes of lightning, and great sultriness of atmosphere in the plains, on which the clouds at that season do not often burst. The coast of Formosa is too well known for its stormy character, for every typhoon or gale that visits the Chinese coast gives us first the benefit of its violence. During my short stay at the capital, I experienced two severe typhoons and several heavy gales. Between Tamsuy and Kelung are the great coal and sulphur mines for which Formosa is justly celebrated, and on several of our hills there are indications of extinct craters; but there is no active volcano, to my knowledge, nearer than about the latitude of the capital. This we once witnessed smoking as we lay at anchor off the coast. Notwithstanding its great heat, Formosa does not bear an entirely tropical character. We have no cocoa-nuts and no parrots. This was remarked by an old Dutch traveller more than a century ago, and it still holds good. But we have areca-palms, rattan-canes, sugar-cane, tea,

and rice, as well as bamboos, longans, bananas, and mangos. Our large interior forests of camphor-trees give us one of the most lucrative articles of commerce; and our hills abound in another plant, the *Aralia papyrifera*, from which is extracted the so-called rice-paper on which those highly coloured Chinese drawings are executed, and of which the manufacture seemed such a mystery until it was discovered that it merely consisted of the careful paring of the pith of this plant.

But after all this, my ornithological readers would doubtless like to hear something of the proper subject of this paper. They will scarcely care to have me fill up the pages of the 'Ibis' with the statistics, commercial and otherwise, of the island. Indeed, I think I have already dipped rather too deeply into them. I will therefore pass at once to the birds. In this, my favourite class, I spared no pains or expense during my comparatively short stay in Formosa, but endeavoured to make as large a collection and gain as much information as possible. I employed a vast number of native hunters and stuffers, and collected very large series of every available species and their eggs. I am, therefore, enabled to offer a very fine list of the avifauna of this hitherto unknown island. I do not, of course, presume to say that Formosa has been thoroughly explored; this would be impossible for one man during so short a stay to accomplish; but I cannot help arrogating to myself the credit of having taken off the cream of novelty in this branch of science. A great deal yet remains to be learnt of the habits of particular species; and doubtless numbers of fine things still blossom unseen for the discovery of future investigators, and I trust not a few of them may fall to my researches on my speedy return to that scene of my consular labours. I cannot, however, help expressing my regret that ornithology, as a science, is so little cultivated, and that I myself have received much less encouragement than I naturally expected after all my earnest endeavours to bring to light the natural productions of a country hitherto almost entirely unknown to civilized men.

Let me now take a glance at the following list, and make a few remarks that have suggested themselves to me. First in order come the *Raptores diurni*. These are all also Chinese,

with the exception of *Spizaetus orientalis*, which later research will doubtless discover on the main. Of the Owls, the *Ninox* is also Chinese and Japanese, the *Scops semitorques* of general distribution throughout continental Asia, whereas the other two are peculiar to Formosa. I cannot undertake to discuss each group separately; my remarks must be more cursory. As in the mammalia, so among the birds, two facts appear pretty patent—that the animals of the plains and low country are, for the most part, identical with Chinese species, while those from the mountains of the interior are more of a Himalayan type, and in some cases too similar to be separated. In some of the birds of the plains, isolation has worked variation more or less marked. In the *Lanius shah*, for example, it is perhaps at its minimum; in *Drymoica extensicauda* it is a little stronger; in *Phasianus torquatus* it is noticeable, and that is all; in *Budytes flava* it causes a curious reversion to what may be considered the typical colour, that of the British variety *rayi*; in *Leucodiophron taiwanum* it has worked out a distinct species, which, nevertheless, occasionally in the old, but more frequently in the young plumage shows indications of one common origin with the Chinese bird; in the *Pomatorhinus musicus* we have a greater advance still, if we can suppose it to be descended from the much smaller *P. stridulus* of China*.

Among the birds of the lower hills we have the *Bambusicola sonorivox*, which isolation has varied in distribution of tints, but not in voice or habits, from its near ally, the *B. sphenura* of China. In the mountain avifauna we have a long series only slightly connected with Chinese forms, with a strong tendency to the Himalayan, and in some cases either identical or so closely related as scarcely to justify separation. This fact is, I think, less singular than would at first appear, simply because we know next to nothing of the ornithology of the Chinese mountain-ranges of corresponding height to those in Formosa. Of Himalayan type there are no less than seventeen species, one of which (the *Herpornis xantholeuca*) is, in my opinion, identical with the Nepalese bird, and another (*Alcippe morrisonia*) has barely separable

* *P. ruficollis*, Hodgs., appears to be more nearly related to the Formosan bird.—R. S.

characters. The relation of Formosa ornithologically with Japan is comparatively almost at zero. I only discovered one bird (the *Parus castaneiventris*) that looks as if it had a common origin with the *P. varius* of Japan; for the *Treron formosæ* is perhaps as nearly allied to many others of that group as to the *Vinago sieboldii*. Many Japanese birds do occur in Formosa, but only as visitants, and in that capacity they also show themselves on the coasts of China. I fully expected, from the geological relation that Formosa is said to bear to the Philippines on the south and to Japan on the north, that the fauna of that island would be more or less connected with those countries; but in this my investigations have decidedly proved me mistaken. The fauna is, instead, of an almost entirely Himalayo-Chinese type.

I have been blamed by some naturalists for allowing Mr. Gould to reap the fruits of my labours, in having the privilege of describing most of my novelties. I must briefly state, in explanation, that I returned to England elate with the fine new species I had discovered, and was particularly anxious that they should comprise one entire part of Mr. Gould's fine work on the Birds of Asia, still in progress. On an interview with Mr. Gould, I found that the only way to achieve this was to consent to his describing the entire series to be figured, as he would include none in the part but novelties which he should himself name and describe. I somewhat reluctantly complied; but as he has done me the honour to name the most important species after me, I suppose I have no right to complain.

I have much pleasure in taking this opportunity to record my thanks to Messrs. G. R. Gray, Selater, and Gould, as also to Mr. Leadbeater, for the kind assistance they have afforded me in lending me specimens and books required for the satisfactory completion of this paper.

✓ 1. PANDION HALIAËTUS, L. Chinese, *He-pew* (Fish-panther).

Ospreys are unusually common about the harbour of Tamsuy, and I have frequently seen no less than five at the same time scattered over the sand-spit that divides the mouth of the river. We disturbed one with a particularly large fish in his claws, with which he had great difficulty in soaring into the air. They were

very shy of approach ; but by a fortunate shot my constable managed to put a bullet into one with an ordinary fowling-piece, at a distance of something like 300 yards. This specimen, which was a male, measured 21 inches ; wing $17\frac{1}{2}$ in. ; expanse 56 in. ; tail 8 in. ; iris clear bright yellow, with a black line round it ; bill black ; basal edge of upper, basal half of lower, and cere bluish grey ; inside of mouth light pinkish purple, with bluish white tongue ; legs pale yellowish grey, tinged with blue ; claws black ; ear-covert small, round, scarce $\frac{3}{10}$ in. in diameter, the bone depressed below, with an oval slit occupying the centre.

This male specimen was somewhat larger than a male from the coast of China ; but in both sexes I have found the Chinese birds smaller in every case than European examples.

2. *BUTEO JAPONICUS*, Schleg. Faun. Japon.

Occasionally seen ; no specimens procured.

✓ 3. *MILVUS GOVINDA*, Sykes.

Milvus melanotis, Schleg. Faun. Japon.

Mr. Gurney considers our Kite to be the true *M. govinda* of Sykes, which occurs in India and its archipelago, together with a cognate form, the *M. affinis*, Gould ; and he is of opinion that the two forms from these localities have been confounded together by naturalists. As in China, so in Formosa, from the south to the north this species abounds, seeking its food more on the water and marshy grounds than on the land. It hovers for hours over the shipping in harbour, watching for any offal or refuse that may be thrown overboard. It is a very foul feeder, is generally impregnated with a disgusting odour, and swarms with lice, and is therefore not a very enticing bird to any one possessed of ordinary sensibilities.

✓ 4. *FALCO PEREGRINUS*, L.

A fine male of this species was brought to me at Tamsuy, on the 20th March. It was quite fresh, only just having been killed by a native some miles up the river. I had much difficulty in inducing him to part with it, as he wanted the quill-feathers for a fan, and was particularly anxious to make "chow-chow" of its flesh. This specimen measured 16 inches ; wing $12\frac{1}{4}$ in. ; tail 6 in. Apical third of bill blackish indigo, fading and blend-

ing with the yellowish on the basal portion of the bill ; cere and skin round the eye chrome-yellow ; iris deep brown ; legs bright chrome-yellow, with black claws. Stomach empty. In the membranes that enclosed the air-cavities over the kidneys were two or three long and a few small whitish *ascarides* ; the largest measured about 11 in. long by $\frac{1}{12}$ in. broad.

This bird, like the Amoy variety, is rather darker on the upper parts than the generality of European Peregrines ; but its under parts are very pale, and only scantily spotted and barred with black. Mr. Gurney considers ours identical with the European bird.

✓ 5. *TINNUNCULUS JAPONICUS*, Schleg.

Almost every country has its Kestrel ; and where it occurs, it is generally the commonest of all Falcons. In Formosa this rule also obtains. One could seldom take a long walk without observing a Windhover or two, so frequently true to its provincial name. At Tamsuy, on the top of the old square-built Dutch fort, which has stood the wreck of time for the last two centuries, a pair of Kestrels made their home. Wandering about the face of the country during the day, in the evening they were regular in their return ; and we were sure to see them, just as it began to grow dark, drop carelessly into one of the banyan-bushes that spring from the sides of the fort, and quietly disappear for the night.

✓ 6. *SPIZAËTUS ORIENTALIS*, Temm. & Schleg. Faun. Japon. pl. 3.

A fine female of this Eagle was brought to me at Tamsuy, on the 25th of March, from the interior. It had been shot while seated on a rock near a large pool ; and from this it was wrongly inferred by the hunter that it was a Fish-Hawk. I learnt from the Chinese that it not unfrequently occurred on the hills, and that it preyed on hares and even occasionally on young deer. Mr. Gurney agrees with me in considering our bird identical with that figured in the 'Fauna Japonica' under the above name. I received the bird the day after it had been skinned, and was thus enabled to make the following note :—length 2 ft. 4 in. ; wing 1 ft. 7 in. ; tail $12\frac{1}{2}$ in., of twelve feathers, somewhat

graduated, giving a roundness to the tail; bill blackish grey, darkest on culmen and towards point; base of lower mandible pale bluish grey; extreme base, rictus, and cere light olive-green, somewhat greyish; inside of mouth light bluish grey; skin round the eye black; legs feathered down to the toes, which are light chrome-yellow; the claws very large, powerful, and deep greyish black, lighter towards their roots.

Prof. Schlegel considers this species, together with *Sp. limnaëtus*, Horsf., and one or two others, to be all referable to the one species, *Sp. cirrhatus*, Gm., the crest being probably only a mark of the full summer plumage, and falling out in the winter. Our bird, apparently an adult female, and shot in the early spring, shows no sign of a crest. It has the head and entire under parts rufous white, the ventral colour, under wing-coverts, and tibial feathers being more strongly rufescent, the latter being indistinctly barred with a deeper shade. The tail is long, nearly even, brown, somewhat indistinctly crossed with 12 broad bars, and tipped with whitish; and the tail beneath appears brownish white, barred with deep brown. The feathers of the upper parts are deep brown, margined with rufous white. The feathers of the head and nape are lanceolate. The upper tail-coverts are cream-coloured, barred with light brown. The greater wing-coverts are brown, margined and largely spotted with reddish white. The quills are blackish brown, the broad part of their exterior webs being brown, and their inner webs barred with whitish, which obtains on the greater part of the feathers as you proceed to the tertiaries. The under wing presents a large patch of a reddish white nearly throughout its entire extent.

7. MICRONISUS GULARIS, Schleg. Faun. Jap.

A young male of this species, brought to me from the interior on the 20th March, 1862, at Tamsuy, is the only proof I have of the existence of this bird in Formosa. It has been identified by Mr. Gurney. The species most usual about Amoy and Foo-chow is the *M. soloënsis*, Horsf., which may at once be distinguished, at all ages, from this species by its pure, unspotted, cream-coloured under wing-coverts. In the autumn *M. soloënsis*

is very common about Foochow, whence it seems to migrate in small parties, touching the coast and Amoy, and wings its way probably to the Philippines and the Indian Archipelago. This, however, is an assumption for which I have no proof further than the fact of its coming from the interior of China to the coast, and then entirely disappearing. It is certainly found in Java, but whether also as a summer resident, I believe, has not been recorded. A female of *M. soloënsis* stands in the galleries of the British Museum, from Shanghai; and another was procured by Mr. Fleming, R.A., in summer, at Tientsin (North China). Our present species, *M. gularis*, Mr. Gurney considers identical with *M. virgatus*, Temm.; and if it really is so, its distribution must be far wider, for that species ranges throughout the peninsula of India. In Japan the *M. gularis* appears to occur abundantly, and I have a specimen from Amoy. About Hongkong and Canton I found another species breeding, which I recorded in the 'Ibis,' vol. iii. p. 25, where it was wrongly referred to *M. soloënsis*. Of this I have a specimen from Macao, and Mr. Fleming procured another at Tientsin. These Mr. Gurney considers probably new, unless they be referable to *A. nisoides*, Blyth, which he has not seen. I have an immature bird of a fourth species, peculiar for the remarkable elongation of the tibial feathers down the outside of the tarsus, which was caught on board a vessel near the Straits of Malacca. Mr. Gurney tells me he has another of this, procured at Malacca, and he believes it to be a good species not hitherto described. This last must not, however, be included in the China list; for we have not, as yet, met with it on that coast.

✓ 8. *CIRCUS SPILONOTUS*, Kaup*. (Pl. V.) ✓

I observed a pair of Harriers beating over the rush-grown delta of the Tamsuy River, above the gorge, in March. I watched them for some time, but was unable to get within shot of them. The male appeared of a pied plumage; but the female was brown. I concluded, therefore, that it must have been the species that prevails in the neighbourhood of Amoy, rather than the true *C. melanoleucus*, Gmel., which ranges in Asia from India to Peking, and which I have also seen from the Philippines; for

* Mon. of the Falconidæ, Contr. Orn. 1850, p. 59.

Mr. Gurney tells me that he is informed by Mr. Blyth that this latter species has, in the adult form, both sexes coloured alike. In the broad, flat, open country of the south-west, near Taiwanfoo, I observed another Harrier, which I took to be *C. cyaneus*, L.; but of the species I cannot be sure, as it might have been one of two cognate forms which are hard to distinguish from it at a distance, except by a most experienced eye. These are the Pale Harrier (*Circus swainsonii*, Smith) and the American Harrier (*C. hudsonius*, L.). The former of these has lately been procured by Capt. Blakiston on the Yangtsze River; and of the latter, specimens may be seen in the Leyden Museum, from the Philippines and Kamtschatka.

I procured no specimens of Harriers in Formosa; but as Mr. Gurney was anxious to have the *Circus spilonotus* figured, I have supplied a male and female, from the neighbourhood of Amoy, for that purpose. With reference to this species Mr. Gurney writes, "I have just compared three male specimens of *C. spilonotus* with three males of *C. melanoleucus*, and enclose you the measurements, by which you will see that *C. spilonotus* considerably exceeds *C. melanoleucus* in all its measurements; in addition to which, it has a much larger bill and stronger tarsi. In all these respects (as also in some degree in colouring) it approaches to an allied but still larger species, *C. assimilis*, Gould, of Australia. I do not think that *C. spilonotus* ever assumes the black plumage which characterizes the head, neck, back, and a portion of the wings of the adult male of *C. melanoleucus*. I have not been able to compare your female of *C. spilonotus* with a female of *C. melanoleucus*, the only (supposed) female which I have of the latter being an individual of the sex of which I do not feel sure.

	Total length (inches).	Wing from carpus.	Tarsus.	Middle toe and claw.
<i>Circus spilonotus</i> ♂ (3 specimens)	22-23 $\frac{3}{4}$	17 $\frac{1}{4}$ -17 $\frac{3}{4}$	3 $\frac{3}{8}$	2 $\frac{3}{4}$
<i>Circus melanoleucus</i> ♂ (3 specimens)	18	14 $\frac{1}{2}$ -15	2 $\frac{7}{8}$	2."

I have unfortunately no measurements of *C. spilonotus* taken from birds in a fresh state. The only note I can find in my journals is the following, made on a male shot at Amoy, the 27th

December, 1859 :—" Bill bluish black, paler on the base ; cere light greenish yellow ; eyes fine waxen or primrose-yellow ; inside of mouth leaden blue ; legs yellow-ochre, with black claws." The females of this species have yellowish-brown irides, and so much resemble those of the Marsh-Harrier (*C. æruginosus*) that Mr. Blyth identified an example I sent him as of that species ; but as I had frequently seen individual brown birds in company with the pied ones, I was led to doubt the assertion. On the rush-grown sand-flats at the mouth of the Changchow River, near Amoy, these birds are particularly common during winter, but they are nearly always females. I do not know for what reason ; but in this locality the adult male is peculiarly rare until the spring, when a few may occasionally be met with. In many points of habit this bird seems to connect the Harriers with the Govinda Kites, feeding largely on offal and carrion, as well as on Batrachians and small mammals. All these objects I have found in the stomachs of those I have dissected ; but remains of birds never. In its heavy-sailing flight this species also more resembles Kites than a Harrier. They were such offensive birds that I did not care to preserve more than a few for identification.

Mr. Gurney writes me that he has seen specimens of *C. spilnotus* from Singapore, as well as from the Philippines.

Fam. STRIGIDÆ.

✓ 9. NINOX JAPONICUS.

Strix hirsuta japonica, Schleg. Faun. Jap.

S. scutulata, Raffles.

An individual of this species used to come regularly every evening to my garden at Tamsuy, in the dusk of evening, during winter, and, perching always on the same branch of one particular tree, devour its meal, which generally consisted of some small murine mammal. I think I can be sure it was a *Ninox*, though I procured no specimens. In my former papers I have always set down the Chinese species as identical with the Indian bird ; but since my return to England, Mr. Gurney has pointed out to me that ours is rather the Japanese species ; and I now find, on comparison with Indian specimens, that the Chinese bird is larger, much deeper coloured, and differs in the shape of the wing.

✓10. *ATHENE PARDALOTA*, n. sp.

I was about to set this small species down as *A. brodii*, Burton, to which it is very closely allied, when Mr. Gurney drew my attention to the dark spots that mark its flanks. Two pairs were brought to me from the forest-country. The sexes appeared to be coloured alike, the females, as usual in *Raptores*, being somewhat larger.

The bills of both sexes, when fresh, were light greenish yellow, patched on the sides with blackish; legs greenish flesh-colour; claws light brown, with black edges and tips. The tail consists of twelve feathers of nearly equal length, with angular tips. The measurements in inches are—

	Length.	Wing.	Tail.
Male	5	3	2
Female	6	4	2½

In *A. brodii* the three first rectrices only are cut out slightly on the inner webs; in ours the four first quills are very deeply indented. In the style of colouring the two species much resemble one another, but ours is at once distinguishable by the large black spots that ornament its white flanks.

Head olive-brown, spotted and barred with ochreous; a broad buff collar reaches from one shoulder to the other, with a large black spot on each side near the scapulars; rest of the upper parts a rich yellowish olive-brown, barred with buff and blackish, many of the scapulars below the surface-feathers being spotted with large white spots; quills hair-brown, some of the inner primaries and all the inner quills being tipped and spotted on their exterior webs with reddish buff; tail rich brown, tipped with buff, both webs of each feather having corresponding transverse spots of the same colour, which thus form five disunited bars across the tail, there being also an indistinct one at the base of the feathers (in *A. brodii* the caudal bars number seven, without counting the extreme basal one or the marginal one at the tips); lore and eyebrow white, the former giving forth stiff bristles, white at their bases, then black, attenuated, and often terminating in yellowish tips; chin, lower neck, and space under the auriculars white; breast and sides banded

with black, whitish, and buff; belly, vent, and lower flanks white, the latter spotted with black; legs feathered to the foot, yellowish brown, banded with deep brown, except on the front of the tarsi, which is white; carpus and under wing-coverts lemon-coloured, the latter marked with blackish brown. As the bird attains to maturity, the buff markings on the head and lower parts become white, and the rich reddish tinge of the upper parts deepens into a deep olive-brown.

On a late visit to Leyden, Prof. Schlegel showed me another small *Athene* from Sumatra, also closely allied to *A. brodiei*. This species, of which the Leyden Museum contained only one specimen, entirely wanted the buff shoulder-collar. It bore the name of *A. sylvatica*, Müller*.

Our little Owl is quite a forest bird, frequenting the wooded mountain-ranges of the interior. I never met with it alive, and therefore regret to say that I have no note on its habits.

✓ 11. SCOPS SEMITORQUES, Schleg. Faun. Japon. t. 8.

Sc. lettia, Hodgs.

A fine female example of this bird, and the only one I procured in Formosa, was brought to me on the 1st of April from the interior hills. It also occurs at Foochow, whence I have received numerous examples. The Foochow bird has been identified by Mr. Blyth as *Scops lempiji*, Horsf.; but then that gentlemen had probably only compared it with Himalayan specimens; and Prof. Schlegel assures me that all the skins he has seen from Hindostan are referable to *S. semitorques*, and not to *S. lempiji*, which is confined to Java and the Indian Archipelago. On a trip into the interior, near Tamsuy, I observed one of this species in the dusk of the evening. It flew out of a pine tree on to the roof of a low native house, and then, ruffling up its feathers, kept stretching forth its head and hooting. Its cries resembled the syllables *hoó-hoúat*, the first pronounced sharp and quick, the latter hoarsely and with more stress. In the dead silence of the night these sounds were rather startling, and might easily be understood to have a portent of evil by the unsophisticated mind. The Chinese, as most other partially civilized people, regard the Owl as a bird of ill omen, and dread

* [See Bp. Consp. p. 40.—ED.]

its approach to their houses; but they also connect unclean animals with their ideas of sorcery and the healing art, hence large prices are often given for the bodies of Owls for the cure of various diseases. One common medicinal property attributed to Owls is that of curing pulmonary affections; and for this reason consumptive patients and old people troubled with rheum are often recommended by their medical advisers to indulge in owl-soup; but in most cases the young of *Bubo maximus* (a common bird in some parts of China) are preferred for this purpose.

✓ 12. *BUBO CALIGATUS*, Swinhoe, n. sp.

Native name, *Ham-hay* ("enduring vacancy").

The only specimen I received of this handsome species was, when it reached me, in fine condition, with horns an inch long; but, owing to an unfortunate accident, the skin has got much injured about the head, and the feathers have mostly fallen out. I sent my example to Mr. Gurney, who would scarcely believe it to have been a horned bird, so similar is it to *Syrnium indranee*. It is quite unlike any of the horned species of Owls; I have therefore no hesitation in considering it new.

Skin round the eye greyish brown; bill pale ochreous white, washed with bluish grey, which deepens on the base of the upper and on the greater part of the lower mandible; exposed portions of the toes brownish flesh-colour, bases light ochreous; claws blackish brown, whitish at their bases; face-disks deep brownish ochre, whitish near the bill, with black-tipped bristles; throat, line round disk, crown, and upper parts deep brown, with a fine purple gloss conspicuous in some lights; a large patch of white on the underneck; axillaries, under parts, and leg-feathers brownish ochre, closely barred with brown, some of the breast-feathers being splashed with the same; quills brown, broadly barred with a deeper shade, and tipped paler, some of the smaller tertiaries and scapulars being barred with white and pale ochreous; tail brown, tipped with white, the two central rectrices with partial bars of a lighter shade, the rest with more determined bars, the thin portions on the inner webs being white; horns about an inch long, of the same colour as the crown. Length 21 in.; wing $15\frac{1}{2}$; tail 10. The fifth quill the longest in

the wing, the first seven being deeply indented on the edge of the inner web, the second to the fifth indented on the outer web; the first six quills are more or less serrated on the outer web, the two first most strongly. The underwing is ochreous white to a great extent, barred in places with various shades of brown. Tail composed of twelve broad feathers, rather narrower at their ends and rounded, the outermost about $\frac{3}{4}$ inch shorter than the central, all somewhat graduated, giving a round form to the tail when expanded. Feet closely feathered to nearly the end of the toes.

This species is found in the dark caverns that abound in the mountains of the interior, wherein it lies securely at rest during day, issuing out at night in pursuit of partridges, hares, and young deer. Such is the account given of it by the natives. I only once met with it; and that was in the dusk of evening, when we were marching rather rapidly over a mountain defile, some 3000 feet above the sea-level. I was first attracted by hearing a loud deep hoot proceeding out of a hollow between two large rocks on a prominence over our heads. On looking in the direction whence the noise came, I observed a large Owl fly out. It was getting late, and we could not tarry; so that I was not able to procure the specimen. I had not at that time handled an example, and therefore set it down as the *Bubo maximus*, noting, however, that the bird seen was much smaller and had a different hoot. This took place in June 1857, when I was assisting the officers of H.M.S. 'Inflexible' in their search for certain Europeans supposed to be held captives at the sulphur-mines near Kelung. It was not till May 1862 that I first procured a specimen. This bird is not more uncommon than the majority of large *Raptores*, but, owing to its shyness and the inaccessibility of its retreats, is particularly difficult to procure.

[To be continued.]

XXII.—Recent Ornithological Publications.

1. ENGLISH PUBLICATIONS.

A SHORT time ago we had the pleasure of announcing to our readers the prospect of that great desideratum, a manual of the ornithology of India, being at length supplied for the use of



J. Wolf, del, et lith,

M & N. Hanhart 12

CIRCUS SPILONOTUS.